

Application/Control Number: 10/619,565

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14. (Currently amended) An organic semiconductor device comprising:
an organic semiconductor layer with carrier mobility deposited between a pair of electrodes facing each other,
wherein at least one of the electrodes includes ~~[[is]]~~ an alloy layer in contact with the organic semiconductor layer, the alloy layer includes a first metal including ~~having~~ a work function at least one of close to and substantially ~~[[or]]~~ equal to an ionized potential of the organic semiconductor layer, and a second metal including ~~having~~ lower resistivity than the first metal.
15. (Currently amended) An organic semiconductor device according to claim 14, wherein the first metal includes ~~has~~ a work function within a range of $\pm 1\text{eV}$ with a center of the range corresponding to the ionized potential of the organic semiconductor.
16. (Currently amended) An organic semiconductor device according to claim 15, wherein the first metal includes ~~has~~ a work function within a range of $\pm 0.5\text{eV}$ with a center of the range corresponding to the ionized potential of the organic semiconductor.
17. (Currently amended) An organic semiconductor device according to claim 14, wherein the alloy layer includes ~~has~~ a layer thickness in the range from 100\AA to $1\mu\text{m}$.
18. (Currently amended) An organic semiconductor device according to claim 17, wherein the alloy layer includes ~~has~~ a layer thickness in the range from 100\AA to 3000\AA .
19. (Original) An organic semiconductor device according to claim 14, wherein content of the first metal within the alloy layer is at least 0.01 atom.%, preferably at least 0.1 atom.%, and more preferably at least 0.5 atom.%, and a maximum of 50 atom.%, and preferably a maximum of 20 atom.%, and more preferably a maximum of 5 atom.%.

20. (Currently amended) An organic semiconductor device according to claim 14, wherein the pair of electrodes includes ~~are~~ a source electrode and a drain electrode, the organic semiconductor layer is deposited between the source electrode and the drain electrode so as to form a channel, and the organic semiconductor device further includes a gate electrode which applies a voltage to the organic semiconductor layer formed between the source electrode and the drain electrode.

21. (Original) An organic semiconductor device according to claim 20, further including a gate insulator layer which electrically insulates the gate electrode from the source electrode and the drain electrode.

22. (Original) An organic semiconductor device according to claim 20, wherein the source electrode and the drain electrode are both provided on one side of the organic semiconductor layer.

23. (Original) An organic semiconductor device according to claim 20, wherein the source electrode and the drain electrode are respectively provided on opposite sides of the organic semiconductor layer so as to sandwich the layer therebetween.

24. (Currently amended) An organic semiconductor device according to claim 21, wherein the second metal comprises ~~is made of~~ material having stronger adhesion to the gate insulator layer than the first metal when the gate insulator layer is in contact with the alloy layer.

25. (Currently amended) An organic semiconductor device according to claim 14, wherein the pair of electrodes includes a source electrode and a drain electrode, the organic semiconductor layer is deposited in a layer thickness direction so as to be sandwiched between the source electrode and the drain electrode, and the organic semiconductor device further includes a gate electrode which is implanted within the organic semiconductor layer.

26. (Currently amended) An organic semiconductor device according to claim 25, wherein the gate electrode implanted within the organic semiconductor layer includes has one of a lattice, comb, and ~~[(or)]~~ rattan blind shape.